Attachment B:
Chronology of Major Events at Landsburg Mine

- 1959-1975 Coal mining
- 1969 – late 1970s Industrial waste, disposed in subsidence trench, land clearing debris in 80s;
- 1988 Voters approve Model Toxics Control Act;
- 1990-1991 Private wells and south portal water studied. Department of Health;
- 1991 Site Hazard Assessment and listing under Model Toxics Control Act;
- 1991 Expedited Response Action (drum removal);
- 1993 Agreed Order for Remedial Investigation /Feasibility Study (RI/FS) started;
- 1994-1996 RI/FS conducted, went to public comment and was finalized. Sampling of private wells and monitoring wells;
- 1996 Amendment to the Agreed Order;
- 1999, 2002 Draft Cleanup Action Plan and subsequent revisions based submitted to Ecology;
- 2000 Interim groundwater monitoring (first round);
- 2001 Amendment to the Model Toxics Control Act;
- 2003 Interim groundwater monitoring (second round);
- 2003-2004 Workplan developed for South Portal hydrogeologic investigation by City of Kent, Landsburg Steering Committee, and Ecology; and
- 2004 Hydrogeologic investigation (March/April) of Rogers No. 3 Portal; continued technical discussion on Landsburg Mine conceptual site model and remedy with City of Kent, Landsburg Steering Committee, and other interested stakeholders.

Response:

There is already a monitoring network installed at the site that will detect groundwater and contaminant flow at the most permeable, shorter pathways. Ecology agrees that potential contamination at depth is an issue of merit and therefore the deep well(s) will address contaminant flow at depth.

3) "Instrumenting the portals such that the water level and discharge rate of each portal can be accurately measured."

Response:

This request to further use the portals and a separate request to sample the south portal monthly is inconsistent with the City's previous position that the present monitoring network at the portals is not located in a position suitable to detect potential contamination discharge from the former mine. Despite this, there is still no detailed justification provided to Ecology for this level of work and sustained monitoring. The immediate objective of the monitoring network is not volumetric quantification of water discharges from the mine, nor has there been provided to Ecology adequate justification for a detailed water balance. The objective is the detection of groundwater contamination that issues from the former mine if it occurs. This is more related to water quality and flow direction rather than water quantity.

The issue of detailed water balance is related to the question of whether the former mine portals are the principal discharges of water entering the former mine. In such a water balance, "Water in" is achieved through precipitation into the trench and inflow from the subsurface. This should be balanced by "Water out", which is comprised of outflow that include the north and south mine portal discharges. By inference, if the portal discharges are less than the "Water in" amount, then there may be other discharges that, if contaminated, may pose risks to groundwater resources.

Conceptually, Ecology concurs that other subsurface outflows from the mine may be achieved both in the sidewalls and as underflow beneath the portals and parallel to coal seam strike. Due to apparent permeability contrasts, the magnitudes should be less than portal discharges. However, none has been quantified in any detail. There is no present justification for water balance and evaluation of risks from contaminated mine water until groundwater contamination issuing from the mine has been detected and measured. It should also be noted that the cleanup remedy may obviate the concern for these other potential pathways by natural partial hydraulic containment provided by the remedial action, followed up by compliance monitoring. Review of estimates of inflows and outflows by Golder Associates in previous communications and reports on this subject has not shown any order-of-magnitude discrepancies in water budget that would cause a concern for major groundwater paths being neglected.

4) Evaluating response of portal discharge and groundwater levels within the mine workings, unmined coal and bedrock sidewalls to precipitation.

anomalies mostly at the northern end of the trench where it was also documented that most dumping occurred. Air monitoring surveys did not detect chemical vapor concentrations indicative of hazardous wastes at the south trench. Past flyovers, and site visits also did not note any such materials (based on review of past communications that apparently touch upon this subject). The RI/FS concluded that the wastes are located at the northern part of the trench.

If this refers to a separate event or discovery, Ecology can investigate this through a separate early discovery and initial investigation process under MTCA.